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NRO - Permit

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STATE OF ALASKA

STEVE COWPER, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

(907) 452-1714

Northern Regional Office
1001 Noble Street
Suite 350
Fairbanks, Alaska 99701

October 30, 1989

NOV 0 ? 1989

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. James M. Short
Permit Director
Prudhoe Bay/Lisburne Facility Operations
ARCO Alaska, Inc.
PO Box 100360
Anchorage AK 99510-0360

RECEIVED
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Re: Air Quality Control Permit to Operate No. 8936-AA010

Dear Mr. Short:

The Department of Environmental Conservation has reviewed your August 31, 1989, request for renewal of the Air Quality Control Permit to Operate for the Lisburne Production Center at Prudhoe Bay. Based on our review of your request, the Department finds:

1. The Lisburne Production Center facility was reviewed under the Prevention of Significant Deterioration (PSD) provisions of 18 AAC 50 and issued a PSD permit on October 8, 1986.

2. Three small diesel engines, used only in emergency, not included in the original permit application, have been installed.

3. If operated less than 120 hours per year, the increase in annual emissions of oxides of nitrogen would be 8 tons per year, well below the 40-tons-per-year threshold specified in 18 AAC 50.300(a)(6)(C)(ii) which would require a new PSD review.

4. Emissions of the other air contaminants would each be less than the applicable thresholds specified in 18 AAC 50.300(a)(6)(C)(i)-(xvi).

5. There have been no other modifications of the facility which would increase the actual emissions of any regulated air contaminant.

Therefore, as provided by 18 AAC 50.400, Air Quality Control Permit to Operate No. 8936-AA010 is granted and enclosed. This permit rescinds Air Quality Control Permit to Operate No. 8536-AA020.

Please note there are 19 conditions of the permit. Violation of any one of these conditions may result in revocation or suspension of the permit in accordance with 18 AAC 50.310. The permit expires July 30, 1994, and you must request renewal at least thirty days prior to that date for continued operation of the facility. Violation of any condition of this permit may subject you to civil or criminal penalties as provided in AS 46.03.760, AS 46.03.765, AS 46.03.780, and AS 46.03.790.

Conditions 6 through 10 require certain tests be performed to ascertain compliance with applicable standards and emission limits. The department may request source tests of any source listed in Exhibit A.

Permit conditions are stipulated pursuant to 6 AAC 50 and the Air Quality Control Regulations 18 AAC 50, and are necessary to ensure that operation of your facility is consistent with the Alaska Coastal Management Program. This permit does not relieve you from the responsibility to apply for any other permit or approval required by the Department or the U.S. Environmental Protection Agency.

Department regulations provide that if you disagree with this decision you may request an adjudicatory hearing in accordance with 18 AAC 15.200-310. The request should be mailed to the Commissioner, Alaska Department of Environmental Conservation, P. O. Box O, Juneau, AK 99811-1800, by Certified Mail, Return Receipt Requested. Failure to submit a request within thirty days of service of this letter shall constitute a waiver of your right to administrative review of this decision. In addition, any other person who disagrees with this decision may request an adjudicatory hearing within thirty days of service of the enclosed permit. Any hearing granted will be limited to issues related to this permit.

Sincerely,

William D. McGee
Regional Environmental Supervisor

Enclosure: Air Quality Control Permit to Operate No. 8936-AA010

cc: Brad Fristoe, NSDO/ADEC
S. W. Hungerford, CO/ADEC
K. Pazera, EPA/AOO

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ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY CONTROL PERMIT TO OPERATE

Permit No. 8936-AA010 Date of Issue: October 30, 1989
Rescinds Permit No. 8536-AA020

The Department of Environmental Conservation, under authority of AS 46.03 and 18 AAC 50.400, issues an Air Quality Control Permit to Operate to:

ARCO ALASKA, INC.
P.O. Box 100360
ANCHORAGE, AK 99510-0360

for operation of the Lisburne Production Center facility. This permit is valid only for the equipment listed in Exhibit A as described in Exhibits B through D of this permit and in the application and subsequent documentation listed in Exhibit E of this permit; where the permit is more stringent, the permit requirement applies.

The facility is located in the Prudhoe Bay Oil Field in Section 19, T.11N., R.15E., Umiat Meridian.

The following conditions apply:

1. Permittee shall comply with the State Ambient Air Quality Standards and Increments established in State Air Quality Control Regulation 18 AAC 50.020.

2. Permittee shall comply with the most stringent of applicable emission standards, limits, and specifications set out in State Air Quality Control Regulations 18 AAC 50.050(a)(1), (b)(1) and (c), and Exhibit B of this permit.

3. Permittee shall operate each of the three emergency diesel engines identified as Source Nos. 21-23 in Exhibit A of this permit, no more than 120 hours per year.

4. Permittee shall operate the heaters identified as Source Nos. 10-20 in Exhibit A of this permit at no more than 100 percent rated capacity.

5. Permittee shall install, maintain, and operate, in accordance with manufacturer's specifications, fuel burning equipment, process equipment, emission control devices, and testing and monitoring equipment to provide optimum control of air contaminant emissions during all operating periods.

6. Except as provided in condition 7 of this permit, permittee shall test the fuel gas, as burned at the Lisburne Production Center, monthly, to determine the concentration of hydrogen sulfide (H_2S) in the fuel gas.

7. Whenever the H_2S concentration in the fuel gas, measured as required by condition 6 of this permit, exceeds 168 parts per million, permittee shall test the fuel gas, as burned, hourly until the concentration of H_2S falls below 168 ppm for 24 consecutive hours, at which time permittee may return to the monthly testing schedule specified in condition 6.

8. Permittee shall test the fuel gas burned in the drill site heaters monthly, to determine the concentration of hydrogen sulfide in the gas.

9. Permittee shall determine the sulfur content of each delivery of diesel fuel using the procedures described in ASTM D 2880-71.

10. If requested by the Department, permittee shall perform source tests of any source listed in Exhibit A, within 90 days of the request, to ascertain compliance with any applicable standard or emission limit.

11. Permittee shall conduct any test requested, as provided for by condition 10, in accordance with the applicable Performance Methods specified in 40 CFR 60, Appendix A, and report the results of the test in the format set out in Appendix III Section IV.3 of the State Air Quality Control Plan, to the Department's Northern Regional Office, 1001 Noble Street, Suite 350, Fairbanks AK 99701, within 45 days following completion of the set of tests.

12. Permittee shall notify the Department's Northern Regional Office by telephone at 452-1714 promptly, within 24 hours, of any equipment failure which increases air contaminant emissions beyond normal levels, or of any change in operating conditions which may affect air contaminant emissions. The notification must include the nature of the occurrence, the expected duration, the steps taken to minimize emissions and avoid recurrence, and a general description of the weather.

13. Permittee shall provide access to the facility at any reasonable time to the Department's representative and any other person authorized or contracted by the Department in order to conduct an inspection or tests to determine compliance with this permit and State environmental laws and regulations. The Department representative will abide by all health- and safety-related rules or procedures prescribed by the permittee, while within the permitted facility.

14. Permittee shall submit a report to the Department's Northern Regional Office, in which is a tabulation of the results of the tests required by conditions 6 through 8 of this permit, and a summary of the information required by condition 12 of this permit for each event which occurred during each calendar month, by the fifteenth day of the following month.

15. Permittee shall submit a Facility Operating Report as described in Exhibit E of this permit to the Department's Northern Regional Office semiannually, by the 30th day of January and July each year.

16. Permittee shall maintain test results, monitoring instrument recorder charts, and other applicable data in an active file for not less than one year, and have them accessible on request to the Department for not less than three years.

17. Permittee shall display a copy of this permit at the facility, and keep on file a copy of the current State Air Quality Control Regulations 18 AAC 50 at the facility.

18. Permittee shall dispose of all solid waste generated at the facility in a site approved by the Department in accordance with 18 AAC 60 or 18 AAC 62, whichever is applicable.

19. Permittee shall dispose of all non-domestic wastewater in a manner consistent with 18 AAC 72.

This permit expires 30 July 1994 and may be suspended or revoked in accordance with 18 AAC 50.310.

Dated this 30th day of October, 1989.

William D. McGee
Regional Supervisor

Exhibit A

SOURCE INVENTORY

Source Number and ID		Source Description	Design Capacity HP or MM Btu/hr
1	LPC-T1	Ruston TB 5000 refrigeration turbine	5,000 HP
2	LPC-T2	Ruston TB 5000 refrigeration turbine	5,000 HP
3	LPC-T3	Ruston TB 5000 refrigeration turbine	5,000 HP
4	LPC-T4	GE 5352(B) gas injection turbine	35,000 HP
5	LPC-T5	GE 5352(B) gas injection turbine	35,000 HP
6	LPC-T6	Solar Mars turbine generator set	12,000 HP
7	LPC-T7	Solar Mars turbine generator set	12,000 HP
8	LPC-T8	Solar Mars turbine generator set	12,000 HP
9	LPC-T9	Solar Mars turbine generator set	12,000 HP
10	LPC-H1	BS & B TE-glycol reboiler	5.0 mm Btu/hr
11	LPC-H2	BS & B TE-glycol reboiler	5.0 mm Btu/hr
12	LPC-H3	ENTEC utility heater	30.0 mm Btu/hr
13	LPC-H4	ENTEC utility heater	30.0 mm Btu/hr
14	LPC-H5	ENTEC process heater	80.2 mm Btu/hr
15	DS1-H1	---	25.0 mm Btu/hr
16	DS2-H2	---	25.0 mm Btu/hr
17	DS3-H3	---	25.0 mm Btu/hr
18	DS4-H4	---	25.0 mm Btu/hr
19	DS5-H5	---	25.0 mm Btu/hr
20	DS6-H6	---	25.0 mm Btu/hr
21	LPC-EDE1	GM EMD 20F4B emergency generator	4,000 HP
22	LPC-EDE2	Caterpillar 3306T firewater pump	213 HP
23	LPC-EDE3	Caterpillar 3306T firewater pump	213 HP
24	LPC-F1	High pressure emergency flare	---
25	LPC-F2	Low pressure emergency flare	---

Exhibit B

AIR CONTAMINANT EMISSION LIMITS, STANDARDS, FUEL SPECIFICATIONS AND OPERATING LIMITS

Exhaust conditions shall be in accordance with the information submitted by the permittee listed in Exhibit E. Permittee shall operate each source in compliance with the applicable emission standard specified in 18 AAC 50.050 and the emission limit, standard, and fuel specification listed below, whichever is most stringent. Unless otherwise noted, the emission limit applies to each source in a group of similar sources.

PART I

Air Contaminant Source Class or Numbers	Performance-based Emission Limit, Operating Limit, or Fuel Specification	Annual Emission Limit (Tons/year)
A. PARTICULATE MATTER		
Gas turbines, heaters, and diesel engines	0.05 gr/scf	89
Gas turbines, heaters, and TE-glycol reboilers	10% opacity, not to be exceeded more than three minutes per hour	
Diesel engines and flares	20% opacity, not to be exceeded more than three minutes per hour	
B. NITROGEN OXIDES		
i. Source Nos. 4-5, GE 5352(B) turbines	104 ppm(v) NO_x corrected to 15% oxygen in the exhaust;	1163
ii. Source Nos. 1-3, TB 5000 turbines; Ruston turbines	144 ppm(v) NO_x corrected to 15% oxygen in the exhaust;	911
iv. Source Nos. 12-20, utility, process and drill site heaters	0.08 lb NO_x per mmscf fuel;	102
Source Nos. 10-11, TE-glycol reboilers	0.16 lb NO_x per mmscf fuel;	14

Exhibit B, continued

v. Source Nos. 21-23; diesel engines	24 pounds NO_x per 1000 HP hour;	7
vi. Source Nos. 24-25, emergency flares	---	97
C. SULFUR DIOXIDE		
i. Source Nos. 1-9, gas-fired turbines; Source Nos. 10-14, gas-fired heaters	168 ppmv H_2S, not to be exceeded for more than three consecutive hours in the fuel gas, as burned	179
ii. Source Nos. 15-20, drill site heaters	600 ppmv H_2S, not to be exceeded for more than three consecutive hours in the fuel gas, as burned	78
iii. Source Nos. 21-23, diesel engines	0.1% S in the diesel fuel, annual average; 0.15% S in the diesel fuel, maximum per test	<1
iv. Source Nos. 24-25, emergency flares	168 ppmv H_2S, not to be exceeded for more than three consecutive hours in the pilot and sweep gas	5
D. CARBON MONOXIDE		
i. Source Nos. 1-9, gas fired turbines	109 pounds CO/mmscf fuel at 100 % rated capacity, corrected to ISO conditions; not to exceed 600 pounds CO/mmscf fuel at less than rated capacity and actual operating conditions	600
ii. Source Nos. 10-20 utility, process and TE-glycol reboilers	0.018 pounds CO/mmscf fuel	24
iii. Source Nos. 21-23 diesel engines	6.4 pounds CO/1000 HP-hr	2

Exhibit B, continued

E. VOLATILE ORGANIC COMPOUNDS

All sources	---	11

F. EMERGENCY DIESEL ENGINES

Source Nos 21-23 diesel engines	120 hours per year, each	---

PART II

The following three pieces of equipment have been installed and operating since the last PSD permit was issued October 8, 1986. Emissions from each of these sources are limited to the quantities noted.

Source ID	Particulate Matter *(tons/yr)*	Nitrogen Oxides *(tons/yr)*	Carbon Monoxide *(tons/yr)*	Sulfur Dioxide *(tons/yr)*	Volatile Organics *(tons/yr)*	Operating Limit
21	0.6	5.8	1.7	0.2	0.2	120 hrs/year
22	<0.1	0.3	<0.1	<0.1	<0.1	120 hrs/year
23	<0.1	0.3	<0.1	<0.1	0.1	120 hrs/year
Net Increase	0.6	6.4	1.7	0.2	0.2	

NOTE: The net change in emissions shown in Part II must be considered when determining the applicability of 18 AAC 50.300(a)(6)(C) when any future modification or series of modifications to this facility is proposed which would increase emissions of a regulated air contaminant.

EXHIBIT C

PROCESS MONITORING and TESTING REQUIREMENTS

Permittee shall install continuous fuel flow monitors and perform tests or analyses of fuel as required by conditions 6 through 9 of this permit and in this exhibit. An alternate monitoring plan may be proposed if it can be shown to ensure continuous compliance with the applicable emission standard or fuel quality limit.

SOURCE (exhaust) or FUEL SUPPLY	PARAMETER AND UNIT OF MEASURE	MONITORING REQUIREMENT or TESTING PROCEDURE and FREQUENCY
Source Nos 12-14, process and utility heaters	CO and O_2,	Portable CO and O_2 analyzer; once per month per heater
Lisburne Production Center fuel supply	sulfur content H_2S, ppm	Draeger tube test of fuel as burned, once each month
	fuel flow mscf/hr	Continuous monitor of total fuel consumption
Source Nos. 1-20 and heaters	fuel flow mscf/hr	Continuous monitor of fuel turbines consumption, each turbine and heater
Source Nos. 15-20, drill site heaters	sulfur content H_2S	Draeger tube test of fuel as burned, once each month
Diesel fuel	sulfur content % sulfur, by weight, each shipment of fuel as delivered	ASTM D 2880-71

Exhibit D

FACILITY OPERATING REPORT

A Facility Operating Report must be submitted to the Department of Environmental Conservation, Northern Regional Office, 1001 Noble Street, Suite 350, Fairbanks, AK 99701, semiannually, by the 30th day of January and July each year. This report must include the following information:

NAME OF FIRM
NAME OF FACILITY
PERMIT NUMBER
PERIOD OF REPORT

1. DAYS OPERATED

Group 1 - Gas-fired turbines Source Nos. 1-9	Number of hours or days per quarter for each source in each group of sources; total per quarter for each group
Group 2 - Gas-fired boilers and heaters Source Nos. 10-20	
Group 3 - Emergency diesel engines Source Nos. 21-23	
Group 4 - Emergency flares Source Nos. 24-25	

2. FUEL CONSUMPTION

Group 1 - Turbines Group 2 - Boilers & heaters Group 3 - Diesel engines Group 4 - Flares pilot gas purge gas flared gas	Indicate for each source in each group, the type of fuel and the quantity burned per quarter in the appropriate units: gallons, $mmft^3$; total per quarter for each group

Exhibit D (continued)

3. FUEL QUALITY

a. Natural gas	
Production facility	Report the quarterly mean concentration of H_2S in ppm if the proportion of gas from the Lisburne field varied from month to month
Drill site heaters	Report the semiannual mean concentration
b. Diesel fuel	Sulfur content of each shipment received

4. Signature of authorized agent preceded by the statement:

> I am familiar with the information contained in this report and, to the best of my knowledge and belief, such information is true, complete, and accurate.

EXHIBIT E

PERMIT APPLICATION DOCUMENTATION

March 27, 1984	Mr. G Scott Ronzio letter to Mr. Stan Hungerford, transmitting permit application entitled, "Prevention of Significant Deterioration (PSD) Permit Application for the Lisburne Development Project Near Prudhoe Bay, Alaska, March, 1984, Final" prepared by Radian Corporation
February 26, 1985	Mr. G. Scott Ronzio letter to Mr. Leonard Verrelli and Mr. Rob Wilson with enclosure entitled, "BACT Update for Gas-Fired Turbines"
May 7, 1985	Mr. G. Scott Ronzio letter to Mr. Leondard Verrelli with attached document entitled, "Technical Note, Air Quality Analysis for the Engineering Refinement to the Lisburne Development Project, May 3, 1985"
January 30, 1986	Mr. T. R. Fink letter to Mr. Keith Kelton with comments on the Department's (Draft) Preliminary Air Quality Technical Analysis, November 6, 1985
June 16, 1986	Mr. D. A. Heatwole letter to Mr. Keith Kelton with comments on the Department's Preliminary Air Quality Technical Analysis, May 15, 1986, and draft Air Quality Control Permit to Operate
September 9, 1986	Mr. D. A. Heatwole letter to Mr. Keith Kelton commenting on proposed changes in certain permit conditions
September 24, 1986	Mr. T. R. Fink letter to Mr. Keith Kelton describing design parameters of the flare system and preliminary plans for flaring during startup of the facility
July 26, 1989	Mr. James M. Short letter to Mr. Jack Coutts describing modification of the Flare System at Lisburne Production Center
August 31, 1989	Mr. James M. Short letter to Mr. Jack Coutts requesting renewal of Air Quality Control Permit to Operate No. 8536-AA020 and identifying three minor unpermitted sources